Outcome of Microsurgery of Herniated Lumbar Discs: Goals for Comparison with Minimally Invasive Surgery (MIS)

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Introduction

To justify minimally invasive surgery for lumbar discectomy, its outcome should be equal to or better than that achieved by microsurgical discectomy.

Methods

Demographic, risk factor and outcome data are presented for 200 patients who underwent microsurgical discectomy by one surgeon from 1995 to 2009.

Results

Sixty-four percent were men, 36% women. Age: 15 to 84, mean 51±15 years. Age distribution: 31-40 years, 18%; 41-50, 25%; 51-60, 24% and 61-70, 12%. Mean BMI, 27; 52% were overweight. College educated, 50%. Desk jobs, 59%. Manual labor, 12%. Etiology of the herniation related to a specific incident in 38%: lifting, 31%; sports/exercise, 22%; body torsion, 21%; falls, 17%. L5-S1 level: 43%; L4-L5: 41%; L3-L4: 13%; L2-L3: 3%. Herniation sites: paracentral, 83%; far lateral, 11%; midline, 6%. Motor deficit, 79%; paresthesias, 85%, sensory loss, 65%.

Reoperation on herniations whose primary surgery was at another hospital was in 19%. Median duration of symptoms to surgery: 5½ months. No patients had compensation claims or lawsuits related to injury. Operating microscope and 3-4 mm diamond burrs for medial facetectomy; microcoagulation of epidural veins and prevention of bleeding: a lateral approach to the herniation with minimal root and dural retraction. Blood loss range, 10-50 cc. Complications: Three wound infections (1.5%) requiring antibiotic treatment and surgery. No new neurological deficits. No CSF leaks. No deaths. At median follow-up of 4 months, 95% of patients had returned to work or their usual activity. Of 162 patients with primary surgery, 9% underwent re-operation for recurrent herniation, 71% in the year following surgery.

Conclusion

1. Surgery of lumbar disc herniations can range from straightforward to technically difficult. The technique used provides access to midline and upward and downward extrusions at all levels and is particularly useful in spondylitic spines and achieves excellent outcomes with a low rate of complications.
2. Although minimally invasive procedures have been reported to yield high success rates, to date no studies have demonstrated any of these to be superior to microsurgical discectomy, which continues to be regarded as the standard with which all other techniques must be compared.

Learning objectives

By the conclusion of this session, participants should be able to:

Evaluate if the various minimally invasive discectomy procedures available are equal or superior to microscopic discectomy by comparing neurological outcome and complications.

References

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3. Arts MP,et. al:Cost-effectiveness of microendoscopic discectomy versus conventional open discectomy in the treatment of lumbar disc herniation.BMC Musculoskelet Disord 7 Suppl42, 2006

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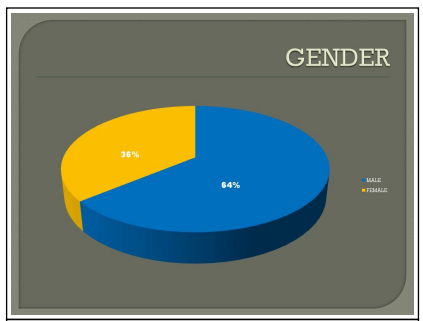

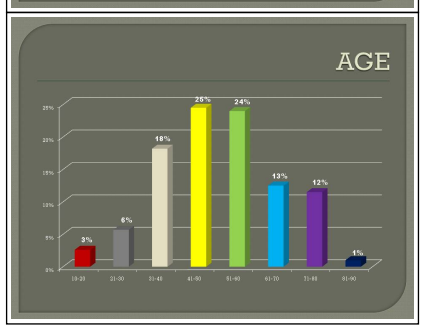

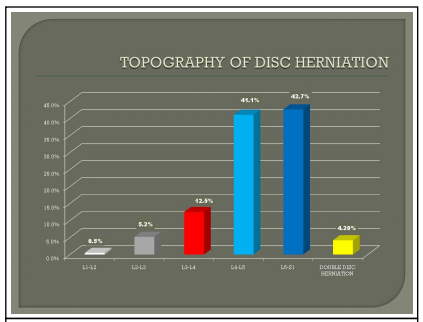

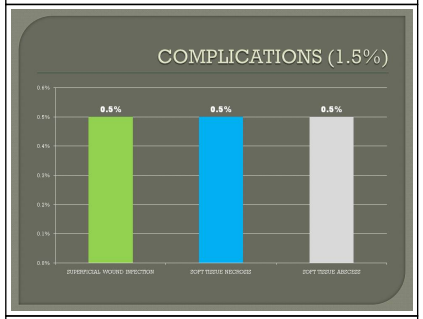

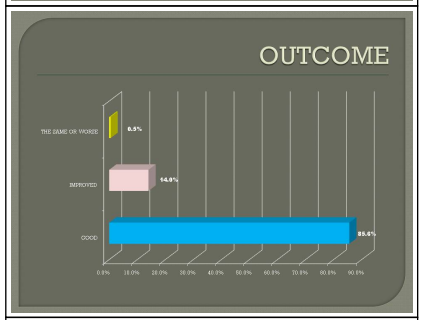

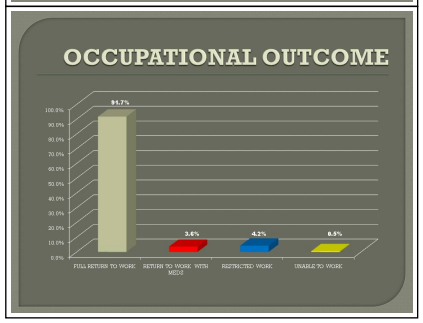

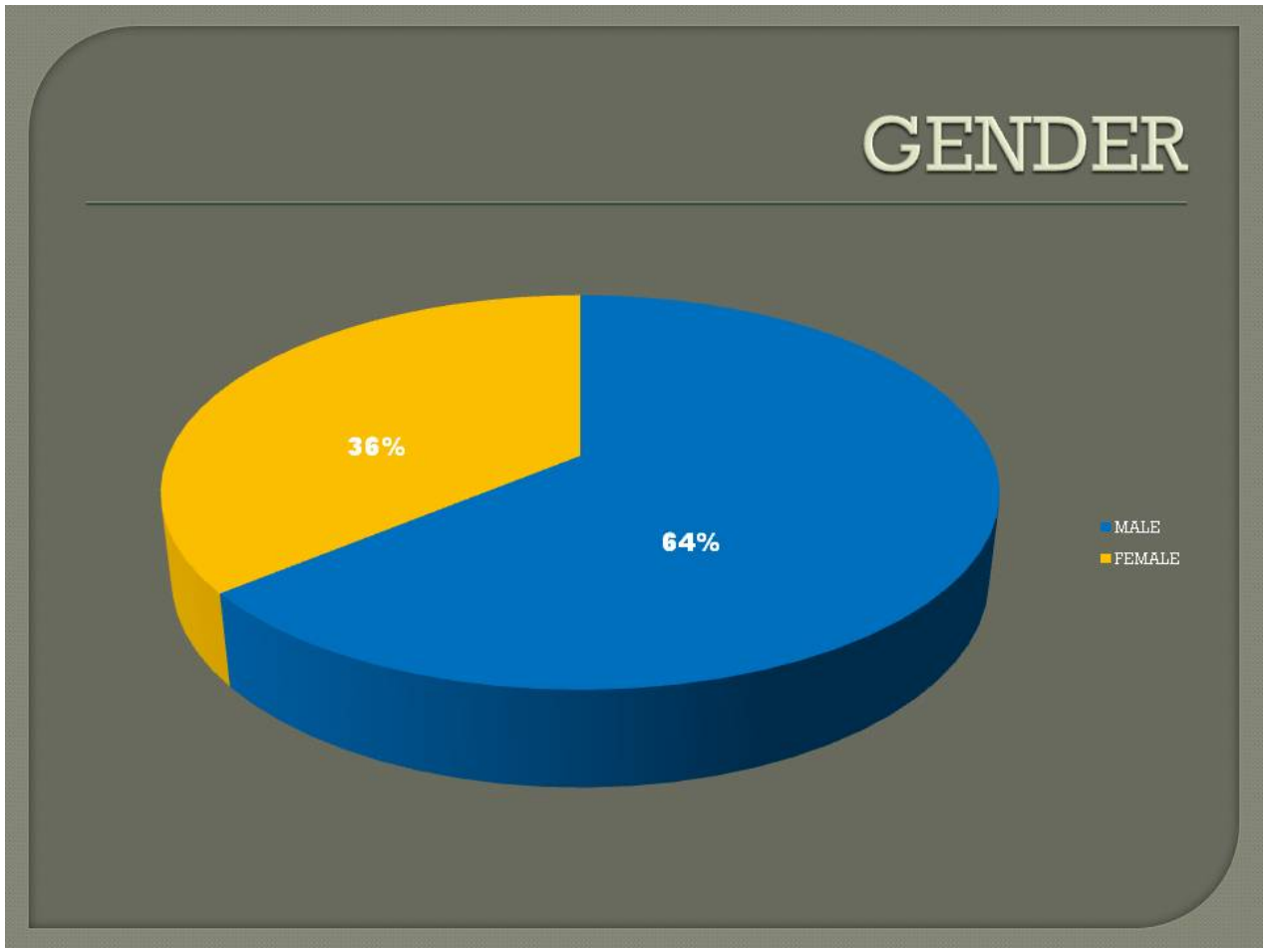
GENDER
36%
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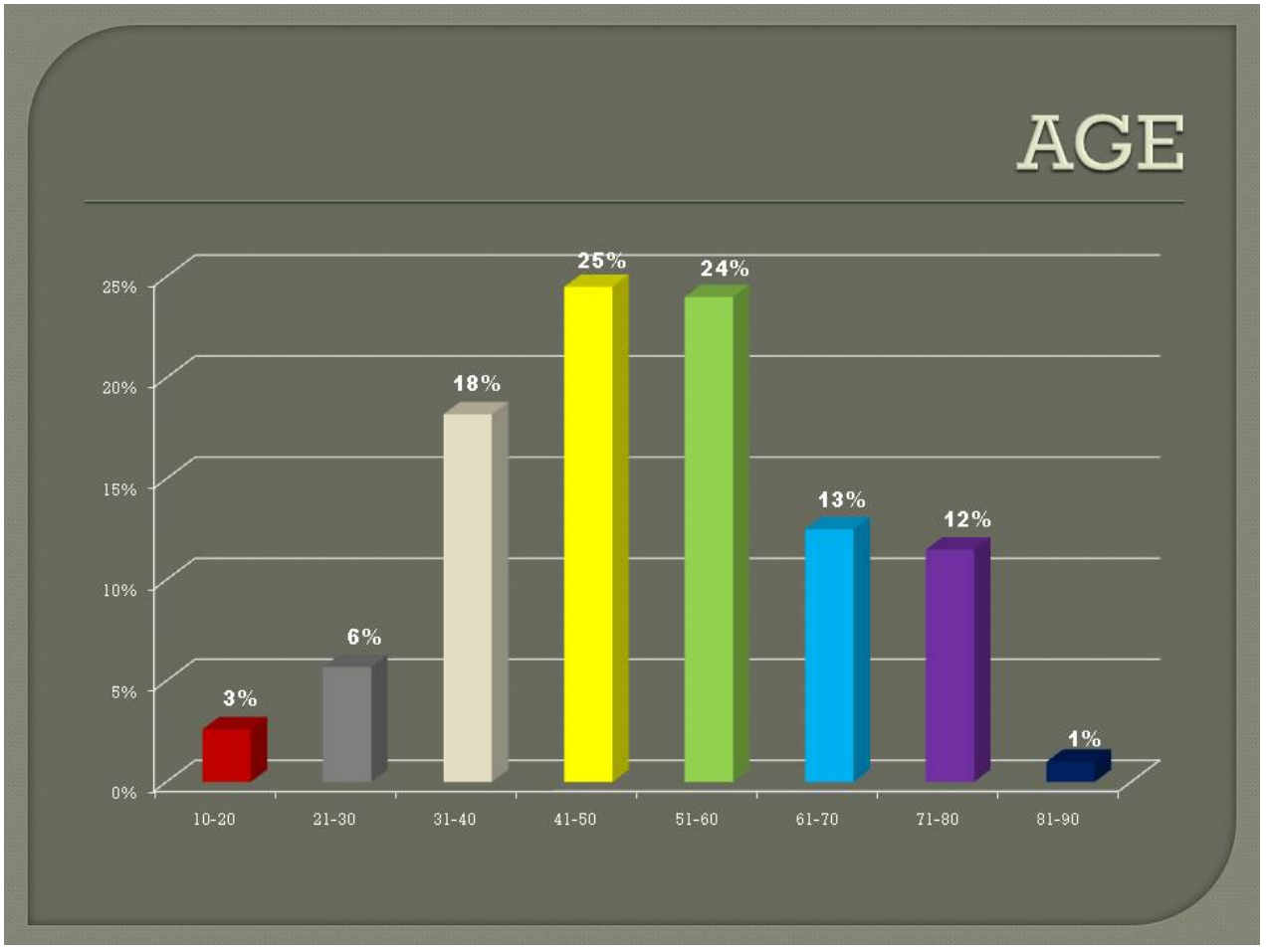
MALE
FEMALE


AGE
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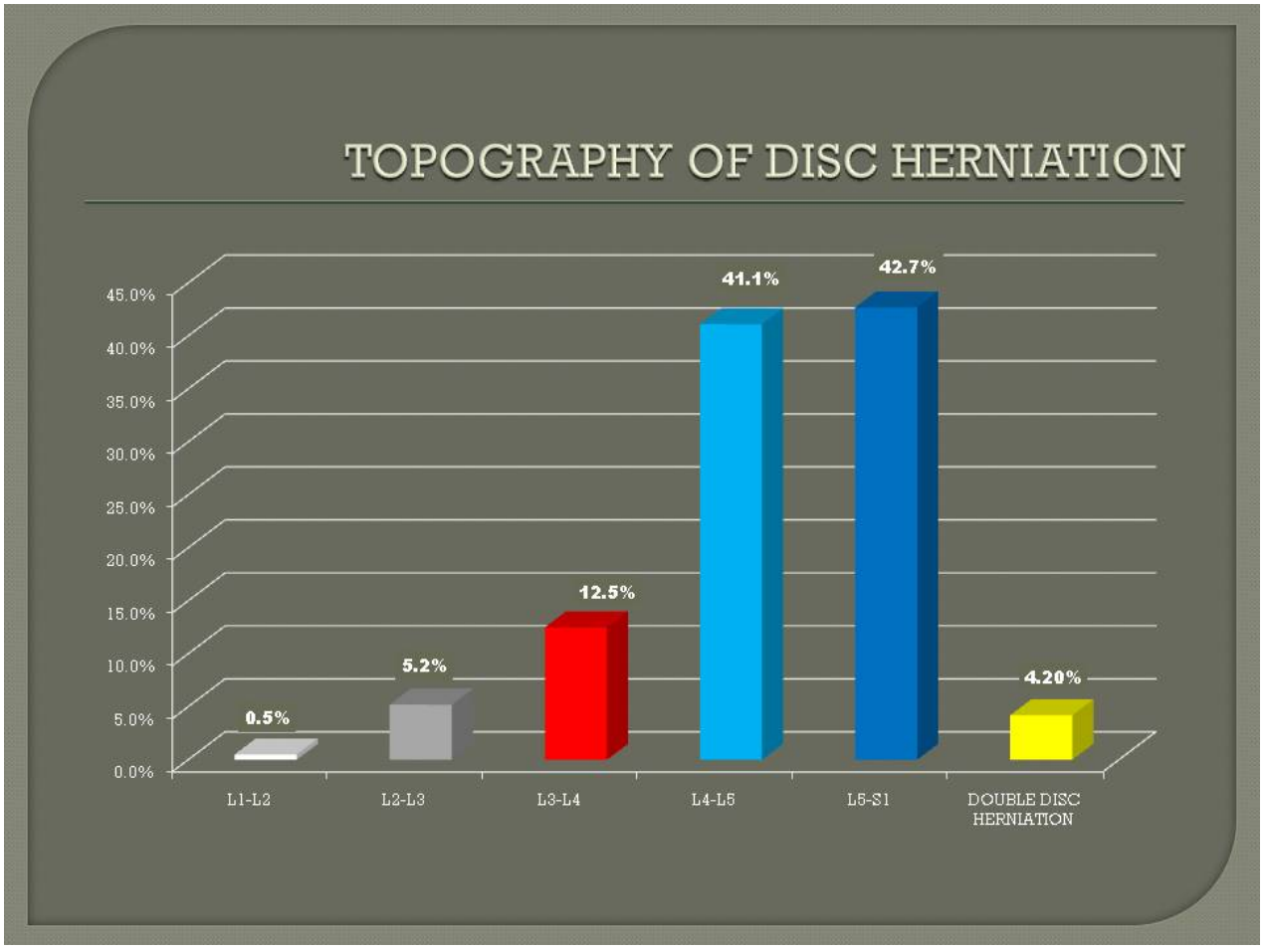
TOPOGRAPHY OF DISC HERNIATION
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35.0%
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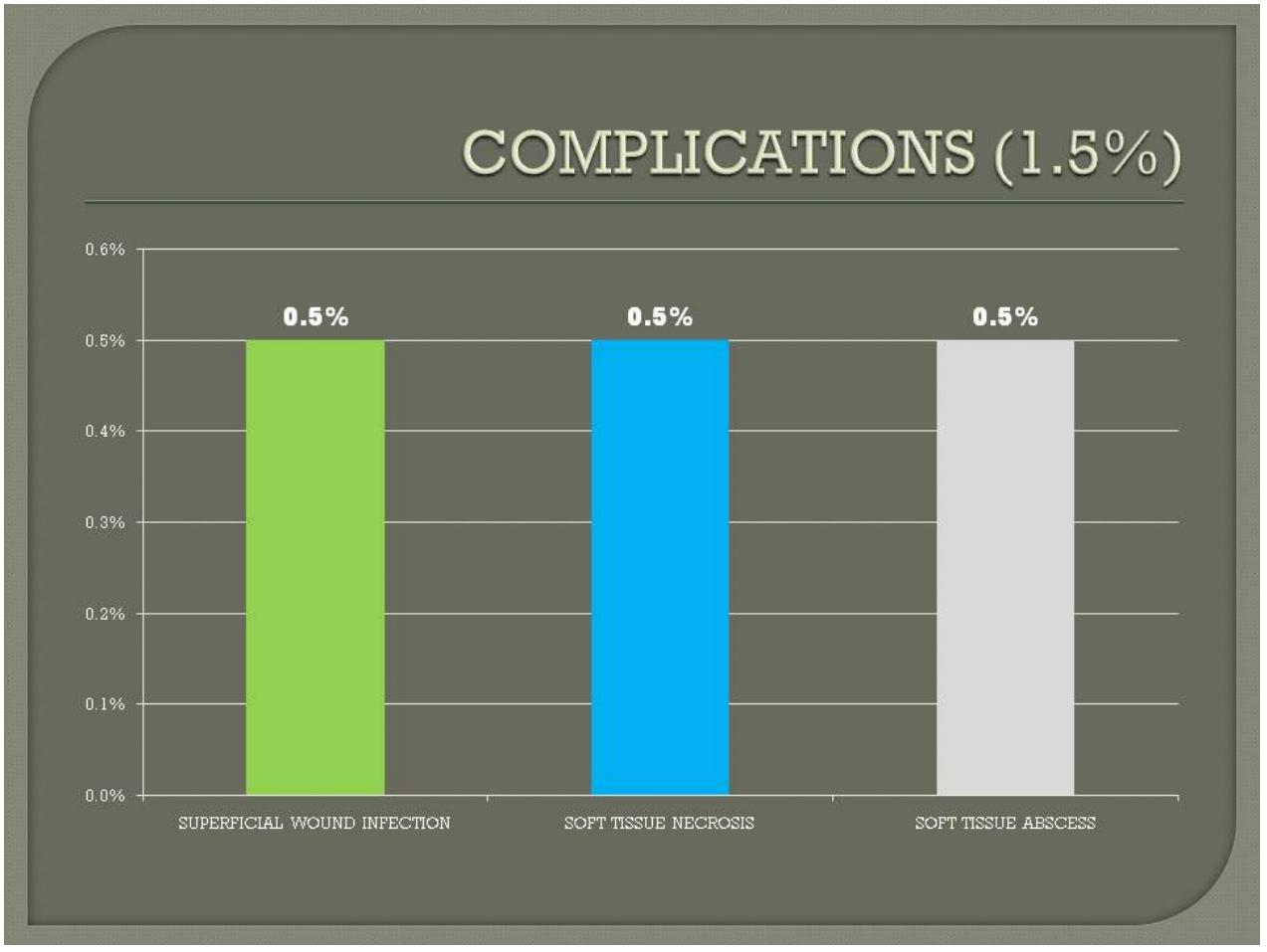
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
0.5%
5.2%
12.5%
41.1%
42.7%
4.20%
L1-L2
L2-L3
L3-L4
L4-L5
L5-S1
DOUBLE DISC HERNIATION


COMPLICATIONS (1.5%)
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0.4%
0.3%
0.2%
0.1%
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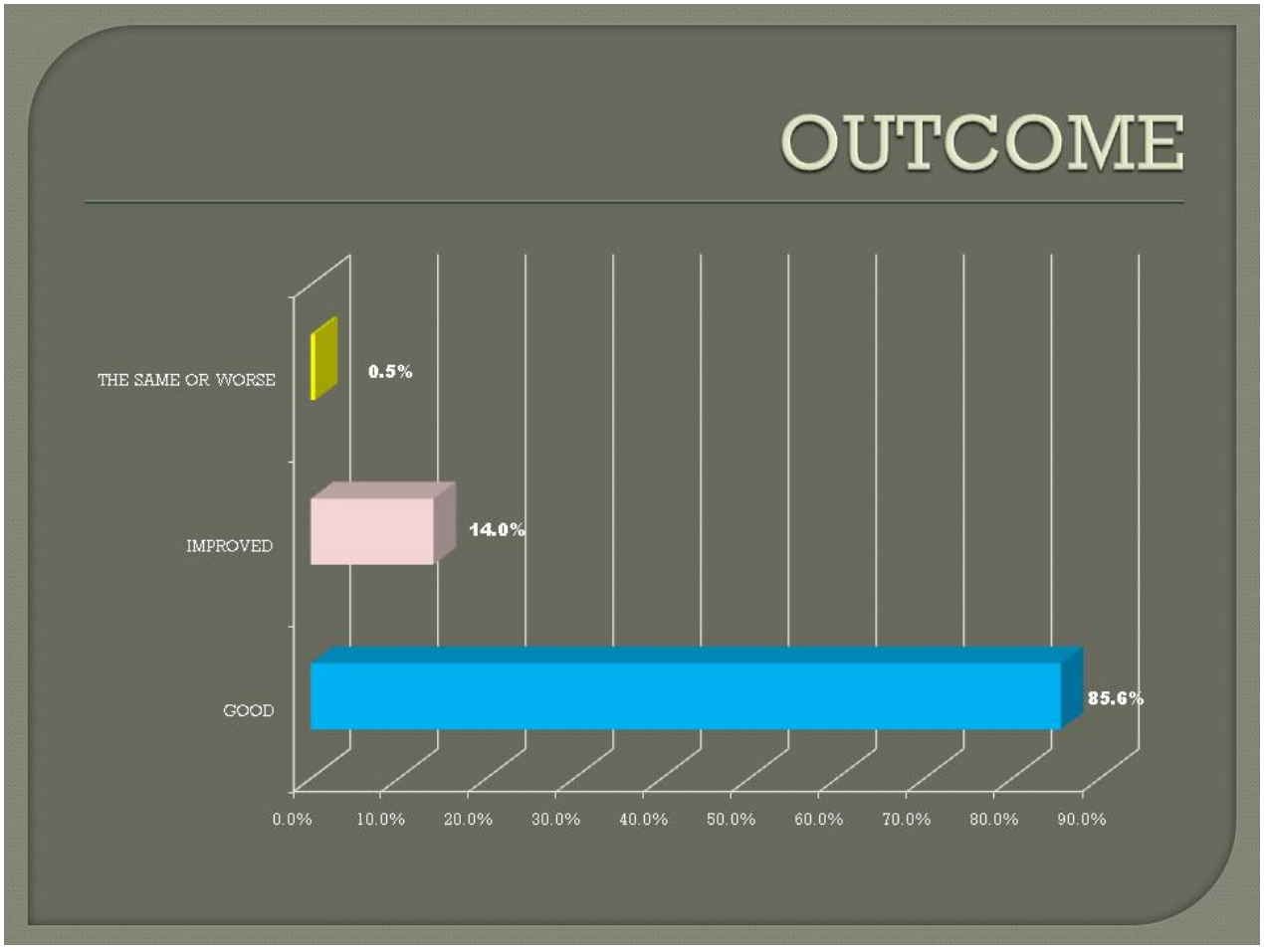
SUPERFICIAL WOUND INFECTION
SOFT TISSUE NECROSIS
SOFT TISSUE ABSCESS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THE SAME OR WORSE
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IMPROVED
14.0%
GOOD
85.6%
0.0%
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20.0%
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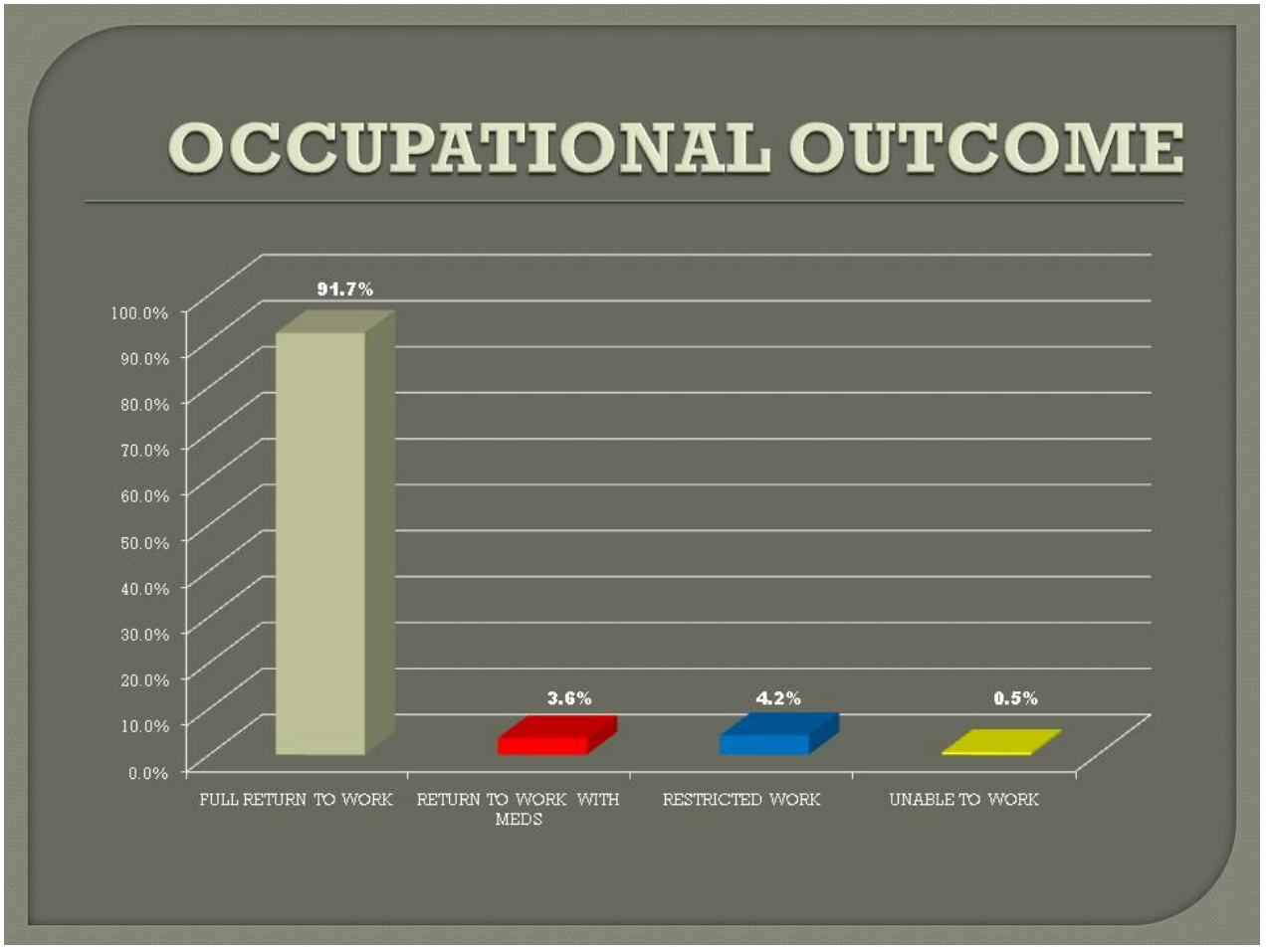
40.0%
50.0%
60.0%
70.0%
80.0%
90.0%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90.0%
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
FULL RETURN TO WORK
RETURN TO WORK WITH MEDS
RESTRICTED WORK
UNABLE TO WORK